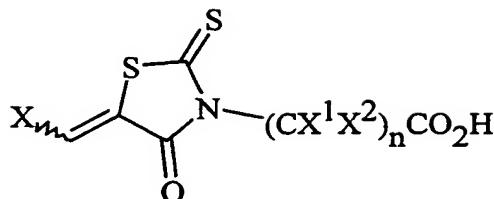


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CLAIMS

What is claimed is:

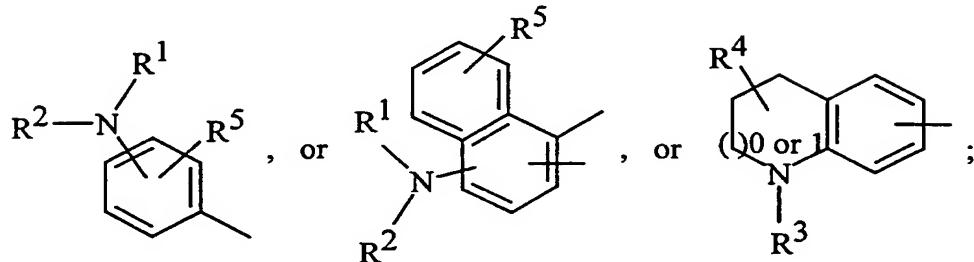
1. A compound of the Formula I



I

5 or the pharmaceutically acceptable salts thereof,

wherein: X is



each n is independently 1 to 3 inclusive;

X¹ and X² are independently hydrogen or C₁-C₈ alkyl, or -(CH₂)ₘ-Z;

y is 0 to 4 inclusive;

Z is hydrogen, C₁-C₈ alkyl, C₃-C₈ cycloalkyl, C₁-C₈ perfluoroalkyl,

10 C₂-C₈ alkenyl, phenyl, substituted phenyl, naphthyl, substituted
naphthyl, -OH, -OC₁-C₈ alkyl, -SC₁-C₈ alkyl, -SO₃H, -CO₂H,

15 -CO₂C₁-C₈ alkyl, -CNH₂, -CNH(C₁-C₈alkyl),

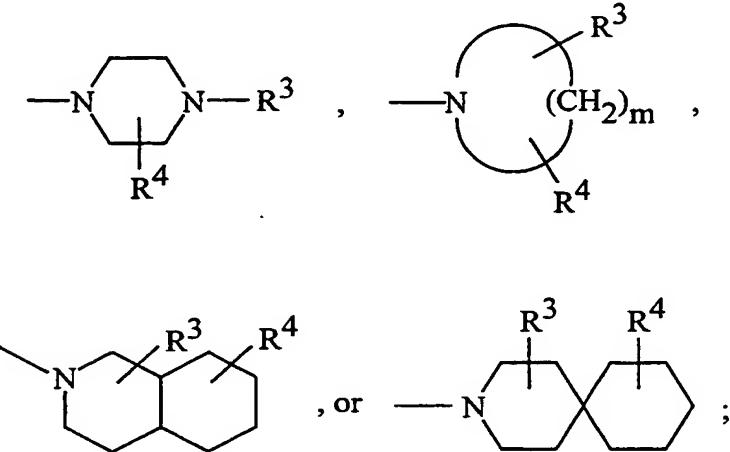
O
||
-CN(C₁-C₈alkyl)₂, -NH₂, -NH(C₁-C₈alkyl),

20 O
||
-N(C₁-C₈alkyl)₂, -NCC₁-C₈ alkyl, guanidinyl, thiaryl, imidazolyl,
thiazolyl, or indolyl;

R¹ and R² are independently C₁-C₈alkyl or -(CH₂)ₙ-C₃-C₆cycloalkyl,

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-(CH₂)_n-phenyl, or R¹ and R² taken together with the nitrogen atom to which they are attached to form a cyclic structure selected from



5 where R³ and R⁴ independently are hydrogen, C₁-C₈ alkyl, (CH₂)_n-phenyl, or (CH₂)_n-cycloalkyl; R⁵ is hydrogen, C₁-C₈ alkyl, halogen or -CF₃;

and each m is 2 to 8 inclusive.

2. The compounds:

10 (Z) [5-(4-Diethylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) [5-(4-Dibutylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) [5-(4-Dipropylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

15 (Z) [5-(4-Diisobutylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) [5-(4-Dipentylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) (5-{4-[Bis-(3-methyl-butyl)-amino]-benzylidene}-4-oxo-2-thioxo-thiazolidin-3-yl)-acetic acid;

20 (Z) [5-(4-Azepan-1-yl-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) [5-(4-Azepan-1-yl-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

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(Z) [5-(4-Dihexylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) {5-[4-(Methyl-octyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid; or

5 (Z) {5-[4-(Octahydro-isoquinolin-2-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid.

3. The compounds:

(Z) {5-[4-(Cyclopropylmethyl-propyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

10 (Z) {5-[4-(Hexyl-methyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) {5-[4-(Methyl-phenethyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

15 (Z) {5-[4-(3-Aza-spiro[5.5]undec-3-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) 3-[5-(4-Dibutylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-propionic acid;

20 (Z) {5-[4-(Butyl-methyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) {5-[4-(Butyl-ethyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

25 (Z) {5-[4-(Benzyl-butyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) [5-(4-Dioctylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) 4-{5-[4-(Hexyl-methyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

30 (Z) 3-{5-[4-(Hexyl-methyl-amino)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

(Z) 3-[5-(4-Dipentylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-propionic acid;

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(Z) 4-[5-(4-Dibutylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-butyric acid;

(Z) 4-[5-(4-Dipentylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-butyric acid;

5 (Z) 2-[5-(4-Dibutylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-propionic acid;

(Z) 2-[5-(4-Dibutylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-3-phenyl-propionic acid;

10 (Z) 2-[5-(4-Dibutylamino-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-3-(3H-imidazol-4-yl)-propionic acid;

(Z) {5-[4-(Hexyl-methyl-amino)-naphthalen-1-ylmethylene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

15 (Z) [4-Oxo-5-(4-pyrrolidin-1-yl-benzylidene)-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) {5-[4-(4-Butyl-piperazin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) (4-Oxo-5-{4-[4-(3-phenylpropyl)piperidine-1-yl]-benzylidene}-2-thioxo-thiazolidin-3-yl)-acetic acid;

20 (Z) {5-[4-(Octahydro-isoquinolin-2-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) 3-{5-[4-(3-Aza-spiro[5.5]undec-3-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

(Z) 3-[4-Oxo-5-(4-perhydro-azepin-1-yl-benzylidene)-4-oxo-2-thioxo-thiazolidin-3-yl]-propionic acid;

25 (Z) 4-{5-[4-(3-Aza-spiro[5.5]undec-3-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

(Z) {4-Oxo-5-[4-(4-propyl-piperidin-1-yl)-benzylidene]-2-thioxo-thiazolidin-3-yl}-acetic acid;

30 (Z) 3-{4-Oxo-5-[4-(4-propyl-piperidin-1-yl)-benzylidene]-2-thioxo-thiazolidin-3-yl}-propionic acid;

(Z) 4-{4-Oxo-5-[4-(4-propyl-piperidin-1-yl)-benzylidene]-2-thioxo-thiazolidin-3-yl}-butyric acid;

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(Z) [5-(1-Butyl-1,2,3,4-tetrahydro-quinolin-6-ylmethylene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) 3-{5-[(4aS,8aR)-4-(octahydro-isoquinolin-2-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

5 (Z) 4-{5-[(4aS,8aR)-4-(Octahydro-isoquinolin-2-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

(Z) [4-Oxo-5-(4-piperidin-1-yl-benzylidene)-2-thioxo-thiazolidin-3-yl]acetic acid;

10 (Z) 3-{5-[(4aS,8aS)-4-(Octahydro-isoquinolin-2-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

(Z) 4-[4-Oxo-5-(4-perhydro-azepin-1-yl-benzylidene)-2-thioxo-thiazolidin-3-yl]-butyric acid;

15 (Z) 4-{5-[(4aS,8aS)-4-(Octahydro-isoquinolin-2-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

(Z) 3-[4-Oxo-5-(4-piperidine-1-yl-benzylidene)-2-thioxo-thiazolidin-3-yl]propionic acid;

(Z) 4-[4-Oxo-5-(4-piperidine-1-yl-benzylidene)-2-thioxo-thiazolidin-3-yl]butyric acid;

20 (Z) {5-[(4-azocan-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) {5-[4-(4-Ethyl-4-methyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) 3-{5-[4-(4-Ethyl-4-methyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

25 (Z) {5-[4-(4-Cyclohexylmethyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

(Z) [5-(1-Butyl-2,3-dihydro-1H-indol-5-ylmethylene)-4-oxo-2-thioxo-thiazolidin-3-yl]-acetic acid;

(Z) 4-{5-[4-(4-Ethyl-4-methyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

30 (Z) 3-{5-[4-(4-Cyclohexylmethyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

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(Z) 3-{5-[4-(4-Benzyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

(Z) {5-[4-(4-Benzyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

5 (Z) 4-[4-Oxo-5-(4-azocan-1-yl-benzylidene)-2-thioxo-thiazolidine-3-yl]butyric acid;

(Z) 4-{5-[4-(4-Benzyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

10 (Z) 4-{5-[4-(4-Cyclohexylmethyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

(Z) 3-[4-Oxo-5-(4-perhydro-azacin-1-yl-benzylidene)-2-thioxo-thiazolidine-3-yl]propionic acid;

(Z) 3-[5-(1-Butyl-1,2,3,4-tetrahydro-quinolin-6-ylmethylene)-4-oxo-2-thioxo-thiazolidin-3-yl]-propionic acid;

15 (Z) 4-[5-(1-Butyl-1,2,3,4-tetrahydro-quinolin-6-ylmethylene)-4-oxo-2-thioxo-thiazolidin-3-yl]-butyric acid;

(Z) {5-[4-(4-Hexyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

20 (Z) 3-{5-[4-(4-Hexyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

(Z) 4-{5-[4-(4-Hexyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

(Z) {5-[4-(4-Butyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

25 (Z) 3-{5-[4-(4-Butyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

(Z) 4-{5-[4-(3-Butyl-piperidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid;

(Z) {5-[4-(3-Pentyl-pyrrolidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-acetic acid;

30 (Z) 3-{5-[4-(3-Pentyl-pyrrolidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-propionic acid;

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(Z) 4-{5-[4-(3-Pentyl-pyrrolidin-1-yl)-benzylidene]-4-oxo-2-thioxo-thiazolidin-3-yl}-butyric acid.

4. A method of treating Alzheimer's disease, the method comprising administering to a patient having Alzheimer's disease a therapeutically effective amount of a compound of Claim 1.
5. A method of treating Alzheimer's disease, the method comprising administering to a patient having Alzheimer's disease a therapeutically effective amount of a compound of Claim 3.
6. A method of treating Alzheimer's disease, the method comprising administering to a patient having Alzheimer's disease a therapeutically effective amount of a compound of Claim 4.
7. A method of inhibiting the aggregation of amyloid proteins to form amyloid deposits, the method comprising administering to a patient in need of inhibition of amyloid protein aggregation an amyloid protein aggregation inhibiting amount of a compound of Claim 1.
8. A method of inhibiting the aggregation of amyloid proteins to form amyloid deposits, the method comprising administering to a patient in need of inhibition of amyloid protein aggregation an amyloid protein aggregation inhibiting amount of a compound of Claim 3.
- 20 9. A method of inhibiting the aggregation of amyloid proteins to form amyloid deposits, the method comprising administering to a patient in need of inhibition of amyloid protein aggregation an amyloid protein aggregation inhibiting amount of a compound of Claim 4.
10. A method of imaging amyloid deposits, the method comprising the steps of:

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- 5 a. introducing into a patient a detectable quantity of a labeled compound of Claim 1;
- b. allowing sufficient time for the labeled compound to become associated with amyloid deposits; and
- c. detecting the labeled compound associated with the amyloid deposits.

11. A method of imaging amyloid deposits, the method comprising the steps of:

- a. introducing into a patient a detectable quantity of a labeled compound of Claim 3;
- b. allowing sufficient time for the labeled compound to become associated with amyloid deposits; and
- c. detecting the labeled compound associated with the amyloid deposits.

12. A method of imaging amyloid deposits, the method comprising the steps of:

- a. introducing into a patient a detectable quantity of a labeled compound of Claim 4;
- b. allowing sufficient time for the labeled compound to become associated with amyloid deposits; and
- c. detecting the labeled compound associated with the amyloid deposits.

20 13. The method of Claim 11 wherein the patient has or is suspected to have Alzheimer's disease.

14. The method of Claim 12 wherein the patient has or is suspected to have Alzheimer's disease.

25 15. The method of Claim 13 wherein the patient has or is suspected to have Alzheimer's disease.

16. The method of Claim 11 wherein the labeled compound is a radiolabeled compound.

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17. The method of Claim 12 wherein the labeled compound is a radiolabeled compound.
18. The method of Claim 13 wherein the labeled compound is a radiolabeled compound.
- 5 19. The method of Claim 11 wherein the labeled compound is detected using MRI.
20. The method of Claim 12 wherein the labeled compound is detected using MRI.
- 10 21. The method of Claim 13 wherein the labeled compound is detected using MRI.
22. A pharmaceutical composition comprising a compound of Claim 1 together with an excipient, diluent, or carrier therefor.
23. A pharmaceutical composition comprising a compound of Claim 3 together with an excipient, diluent, or carrier therefor.
- 15 24. A pharmaceutical composition comprising a compound of Claim 4 together with an excipient, diluent, or carrier therefor.